LEDko™

EXT M

USER MANUAL

vrs. 2.8 - 09.11.2023

coemar

Congratulations on having purchased a **Coemar** product. You have assured yourself of a fixture of the highest quality, both in componentry and in the technology used. We renew our invitation to you to complete the service information on the previous page, to expedite any request for service information or spares (in case of problems encountered either during, or subsequent to, installation). This information will assist in providing prompt and accurate advice from your **Coemar** service centre. Following the instructions and procedures outlined in this manual will ensure the maximum efficiency of this product for years to come.

Index

1. Packaging and transportation

1.1 Packaging

Open the packaging and make sure that no part of the equipment has suffered any damage during the transportation. In case of damage to the fixture, contact your currier and your supplier immediately by telephone, fax or email, and inform them you will formally notify them in writing through registered letter.

Packing list

Ensure the packaging contains:

1 LEDko EXT M

2 Power Junction Plugs

2 DMX Junction Plugs

1 end of line closure cap (RME34/G)

1 Power Box

1 Instruction manual

1.2 Transportation

The **LEDko EXT M** should be transported in either its original packaging or in an appropriate flight case.

2. General information

2.1 Safety informations

Fire prevention:

1. Never locate the fixture on any flammable surface.
2. Minimum distance from flammable materials: 0,5 m.
3. Minimum distance from the closet illuminable surface: 0,5 m.
4. Replace any blown or damaged fuse only with those of identical values. Refer to the schematic diagram if there is any doubt.
5. Connect the projector to mains power protected by a thermal magnetic circuit breaker.

Prevention from electric shock:

1. Presence of high voltage inside of the fixture. Insulate the projector from mains supply before opening or performing any function which involves touching the inside of the fixture, including lamp replacement.
2. For the connection to the mains, adhere strictly to the guidelines outlined in this manual.

3. The level of technology of **LEDko EXT M** requires the use of specialised personnel for all service applications; refer all work to your authorised **Coemar** service centre.
4. A good earth connection is essential for the proper functioning of the projector. Never connect the fixture if there is no earth connection.
5. Mains cables must not come into contact with other cables.
6. Do not operate the projector with wet hands or in an area where water is present.
7. The fixture must never be located in an exposed position, or in areas of extreme humidity.

Safety:

1. The projector must always be installed with bolts, clamps, or other fixing devices which are suitably rated to support the weight of the projector.
2. Always use a secondary safety fixing device with chain or steel wire of a suitable rating to sustain the weight of the unit in case of failure of the principal fixing point.
3. The external surfaces of the unit, at various points, may reach 60°C. Never handle the unit until at least 10 minutes have elapsed since the LED was turned off.
4. Never install the fixture in an enclosed area lacking sufficient air flow; the room temperature must not exceed 40°C.
5. The projector contains electronic and electrical components which must under no circumstances be in contact with water, oil or any other liquid. Failure to do so will compromise the proper functioning of the projector.

2.2 Warranty conditions

1. The fixture is under warranty for 24 months from the purchase date against factory defections.
2. Damage ought to unskillfulness, inappropriate use, or lack of suggested maintenance are excluded from the warranty.
3. Warranty expires when the projector is opened by unauthorized personnel.
4. Warranty doesn't include the replacement of the fixture.
5. Serial number and model of the fixture are necessary to retrieve informations and assistance from the dealer.

2.3 EC Norms

1. The fixture satisfies the essential requirements of the directive 2004/108/EC, 2006/95/EC, 2011/65/EC, 2002/96/EC & 2003/108/EC.
2. The fixture is in accordance with the standard EN 50419 (RoHS) and satisfies the requirements of the directive 2002/96/EC (WEEE).

3. Product specifications

3.1 Technical characteristics

Power supply	85-264 V, auto-sensing, 47/63 Hz
Maximum current	0.28 A @ 230 V, 0.56 A @ 115 V
Power factor	Cosφ = 0.9
Power consumption	58 W
Color temperature	**Tungsten** version: fixed white temperature at 3.200 K **Daylight** version: fixed white temperature at 5.600 K **VariWhite** version: variable white from 2.800 K to 6.000 K
Color Rendering Index (CRI)	**Tungsten** and **Daylight** versions: CRI 80, CRI 90 or CRI > 95 **VariWhite** version: CRI > 95
Weight	Body: 2.8 Kg (6.17 lbs) Power Supply Box: 0.96 Kg (2.12 lbs)
Working Temperature	From -25°C to +40°C (-13°F to 104°F)
Storage Temperature	From -30°C to +80°C (-22°F to 176°F)
IP rating	IP65

3.2 Dimensions (ON/OFF version)
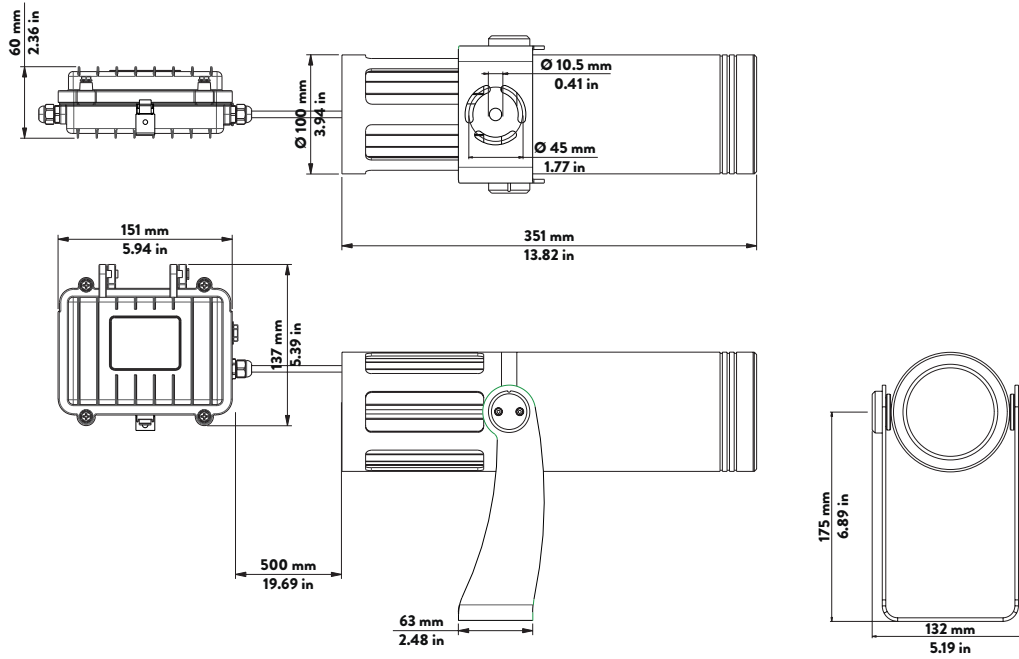
3.3 Dimensions (DMX version)

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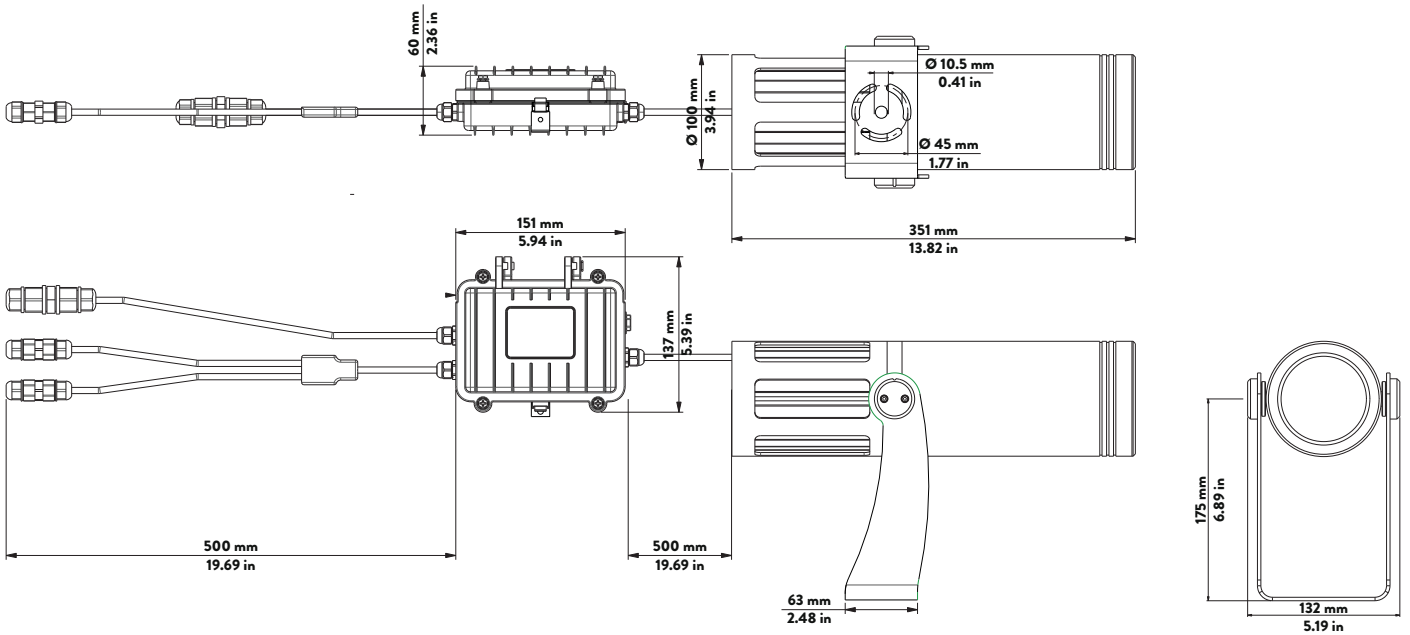
3.4 Unit's main components
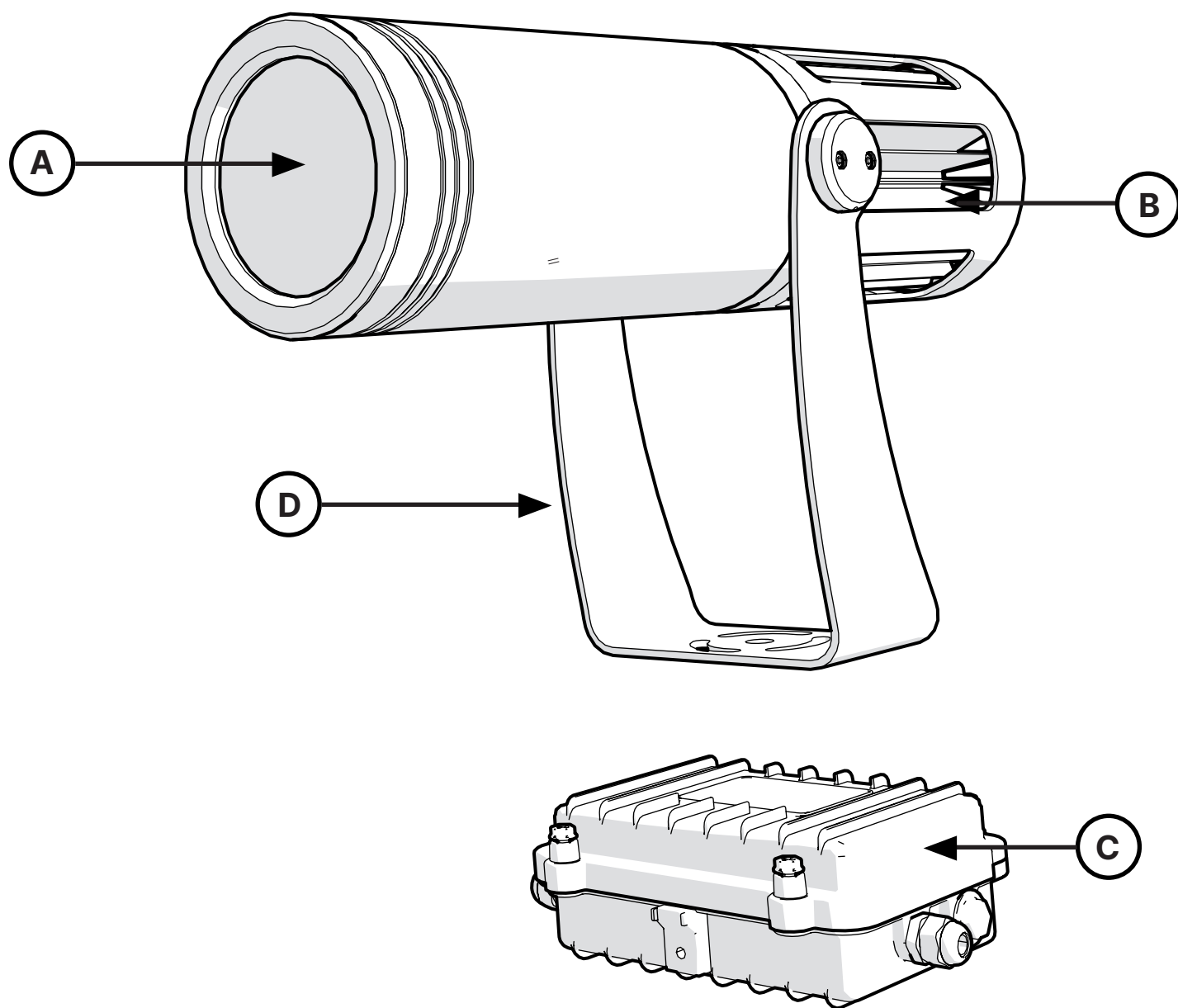
Components description	
A	Front glass
B	Cooling unit
C	Power Box
D	Yoke with mounting holes

4. Installation

4.1 Mechanical installation

LEDko EXT M may be hung from an appropriate structure in any position or on tripode. If hanging the fixture from a lighting truss or similar, we recommend the use of an appropriate clamp "**A**", as shown in the following diagram.
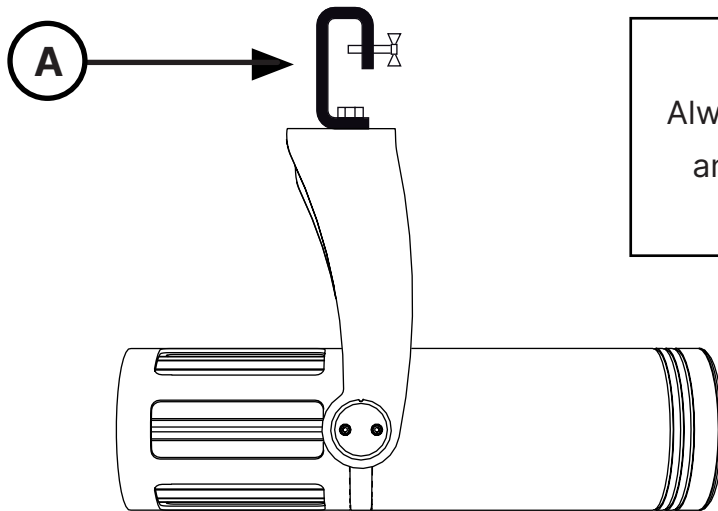
> **Warning!!**
> Always ensure that your support structure and fixing (bolts, clamps, etc...) are rated to support the weight of the fixture.

4.2 Safety chain

When hanging **LEDko EXT M** it is recommended to use a safety chain, as required by current legislation. The safety chain must pass through the handles of the unit and then attached to the structure.

If using steel cables and chains not Coemar's production, make sure they are suitable to support the weight of the unit according to normative UL/ETL (required: the weight of 6 complete devices for at least one hour).
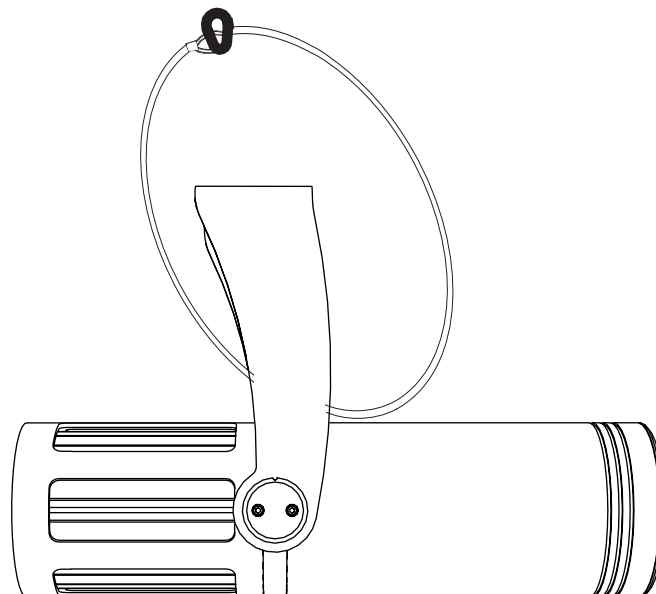
4.3 Adjusting unit's tilt

In order to adjust the tilt of the unit simply loose the screws "**B**" on the both sides of the yoke, adjust the tilt and lock the yoke by tightening the screws again.
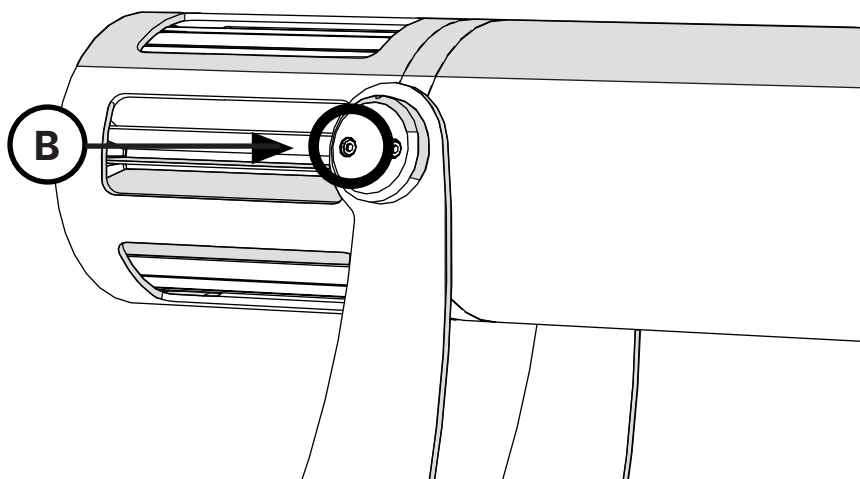
4.4 Open the projector and zoom adjustment

In order to adjust the zoom open the projector. To do so loose the screws "**C**" on the both sides of the yoke and pull away the lens tube holder of the projector; loose the knobs "**D**" and adjust the zoom at your will by moving the two lenses (if the front lens "**E**" is moved, the zoom of the light beam increases or decreases, if the rear lens "**F**" is moved, it will be possible to adjust the focus).

Note: Disconnect the projector from the mains power before opening it.
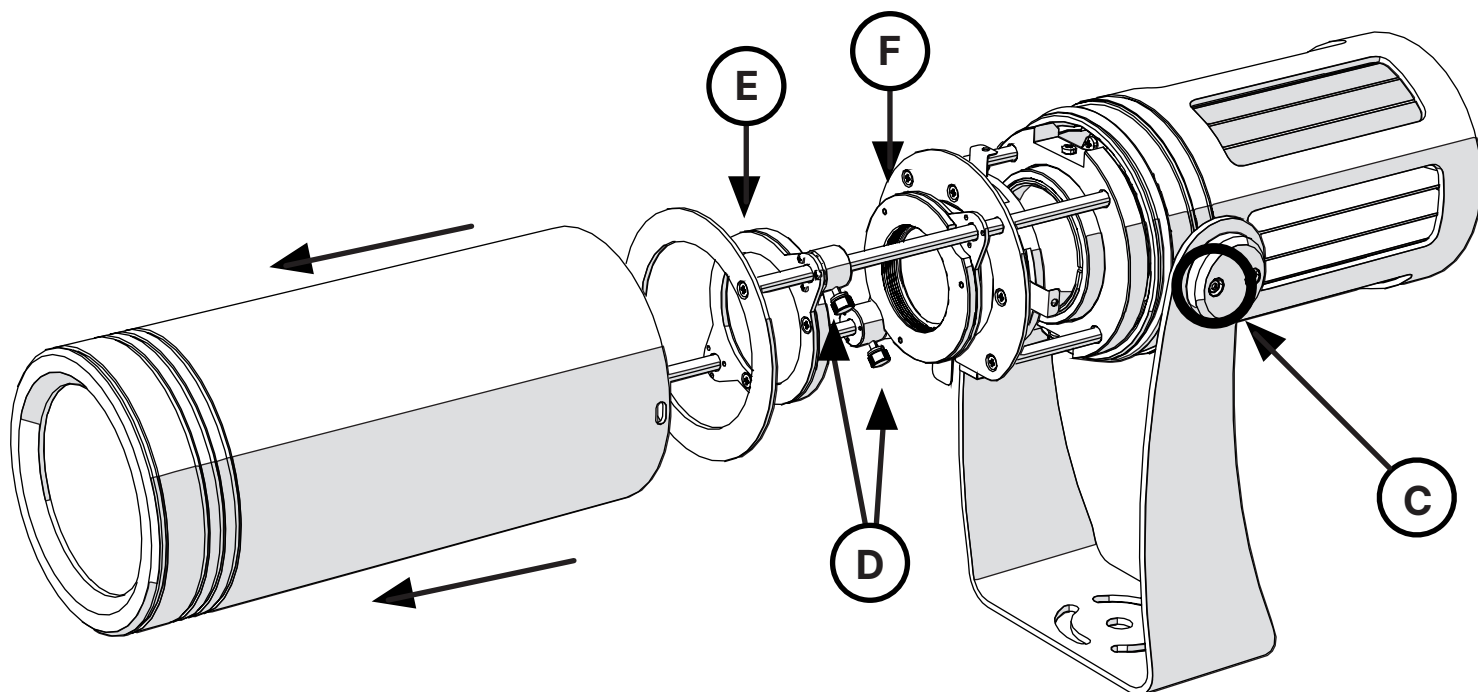
4.5 Four blade framing system adjustment

1. In order to shape your light beam use the four blade "**G**"
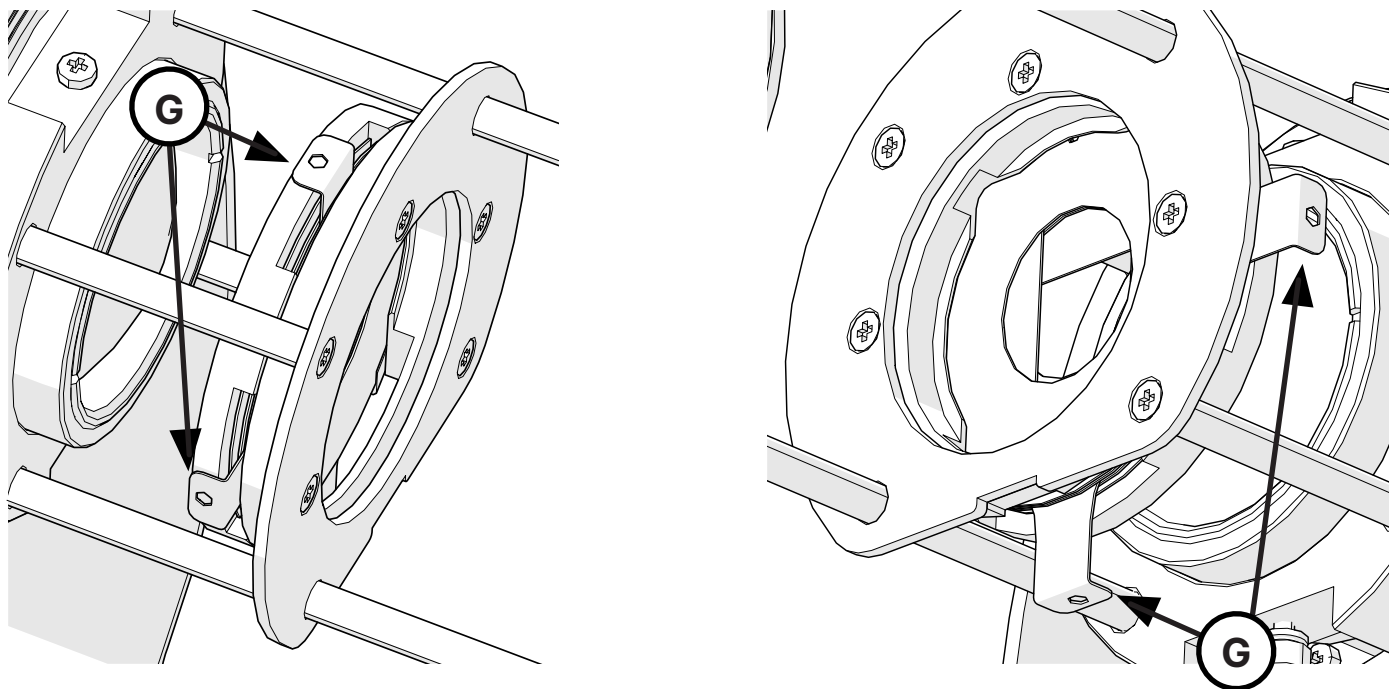
2. Thanks to them you can give to your light beam the shape desired "**H**".
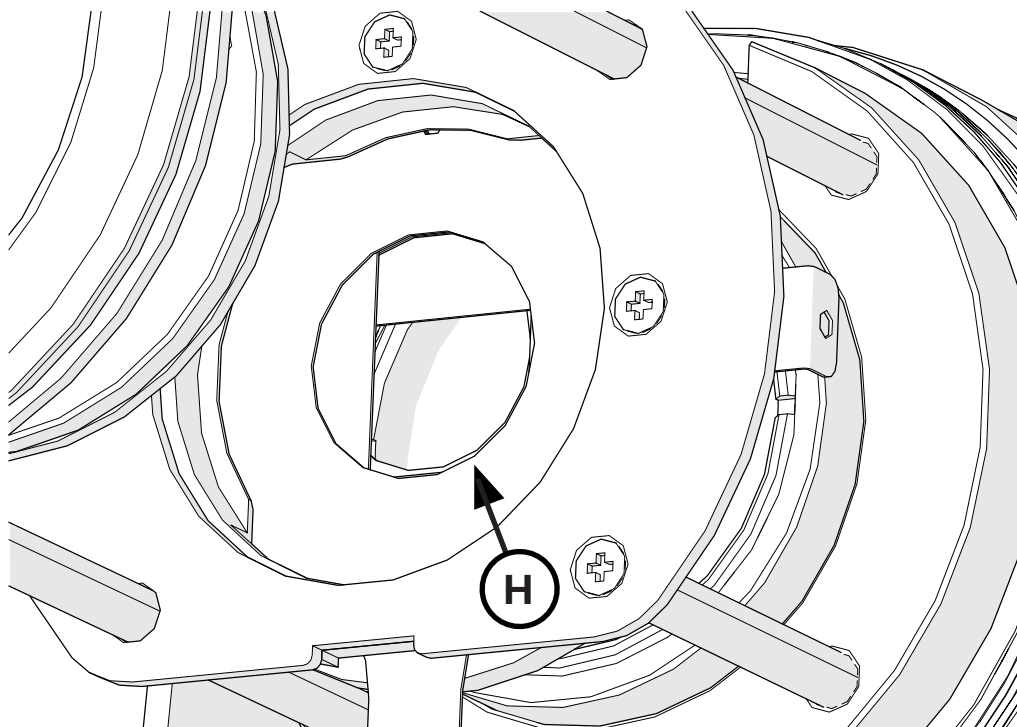
4.6 How to insert a gobo

1. Take your gobo holder, pull away the metal plate (indispensable to prevent the gobo from falling); if a metal gobo is used (therefore very fine), use the metal ring supplied (code 382.020), this process will increase the thickness of the gobo, this will ensure that the gobo does not move inside the gobo holder.
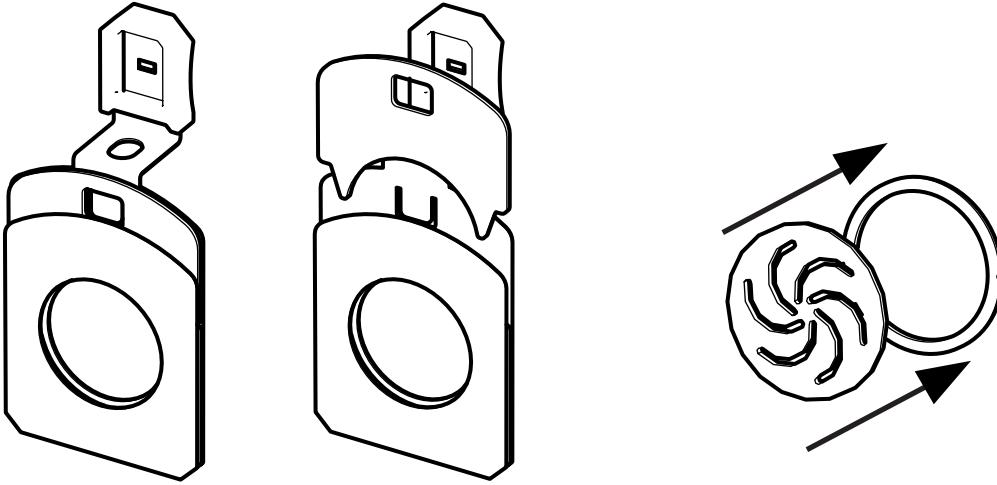
2. Insert the gobo and place back the metal plate.
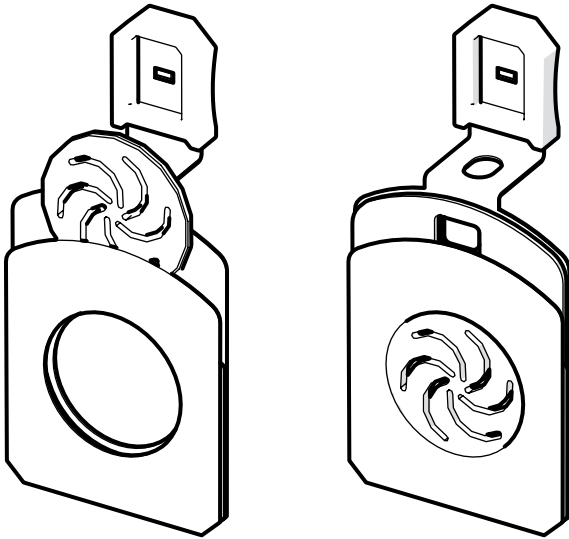
3. In order to prevent the fallen of the gobo apply a force on the back locking tab "**I**" by using a screwdriver.

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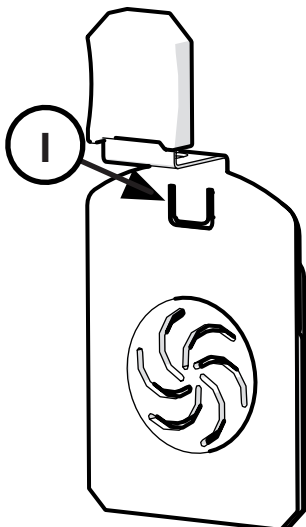
4. Once the closing tube for optical unit is removed and the gobo is inserted, mount the gobo holder into the **LEDko EXT M** slot.
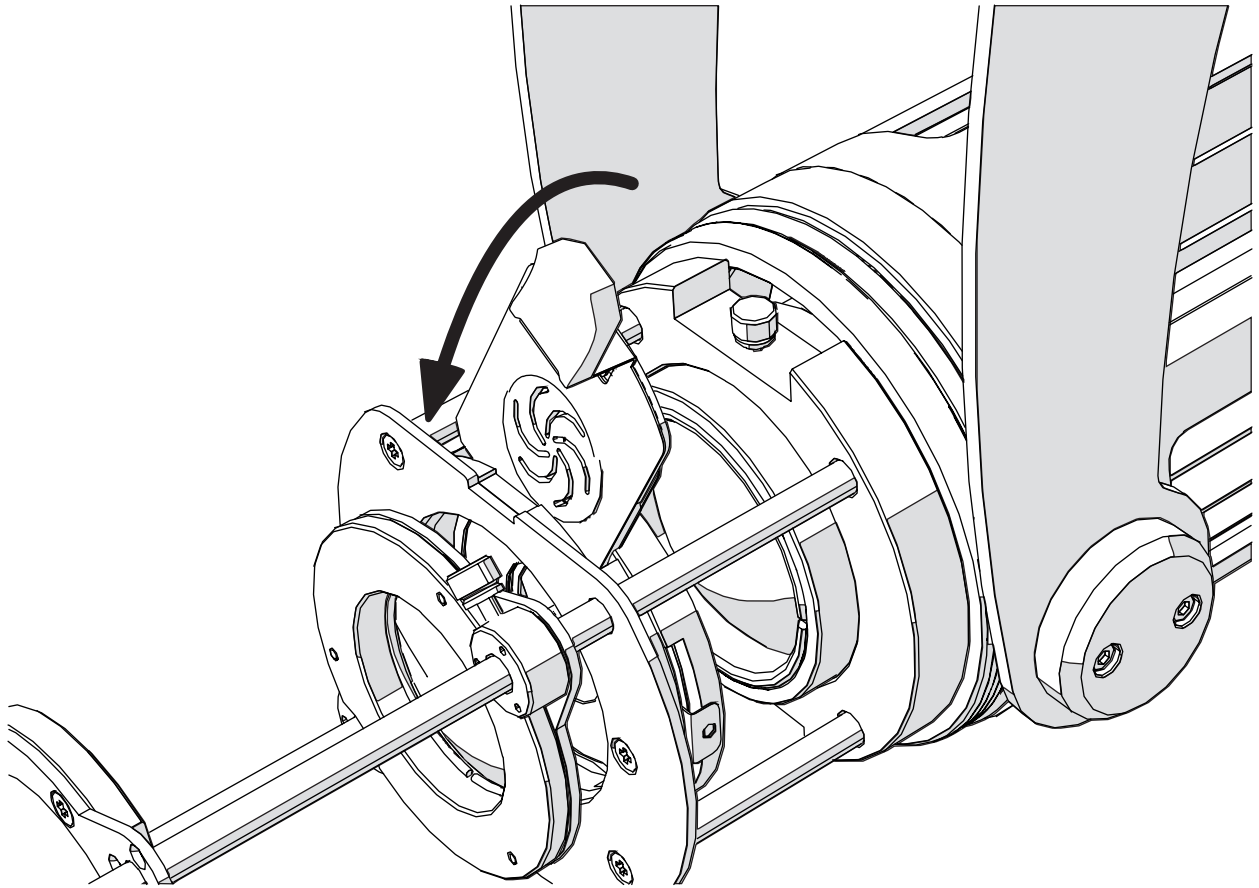
5. Once the gobo holder is inserted, pay attention that the gobo slot "**J**" is facing upward. If not loosen the knob "**K**" in order to turn the optical group by 180 degrees; once the optical group is settled, tighten the knob.
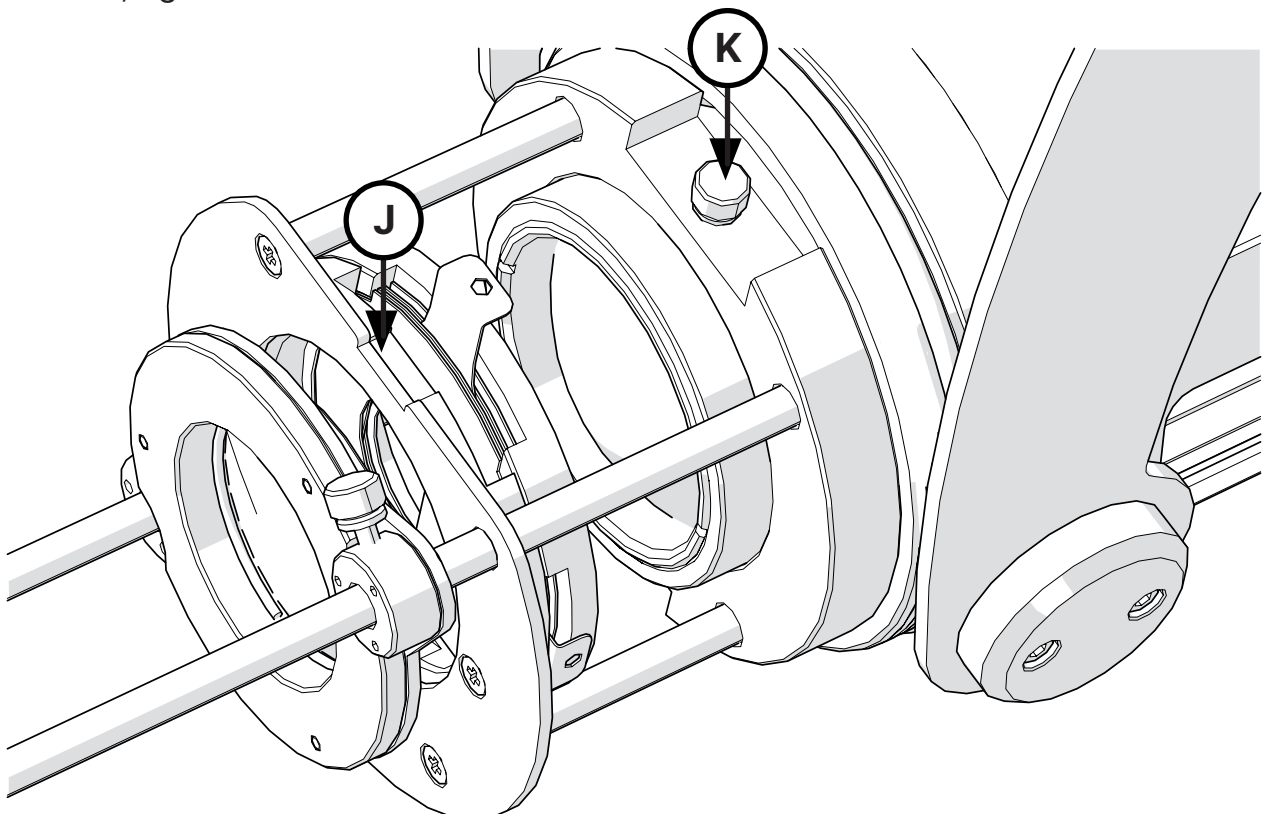
4.7 Close the projector

1. Once the framing system and the gobo are settled remember to close the LEDko EXT M by putting back the lens tube holder and tighten the screws loosen at the beginning.
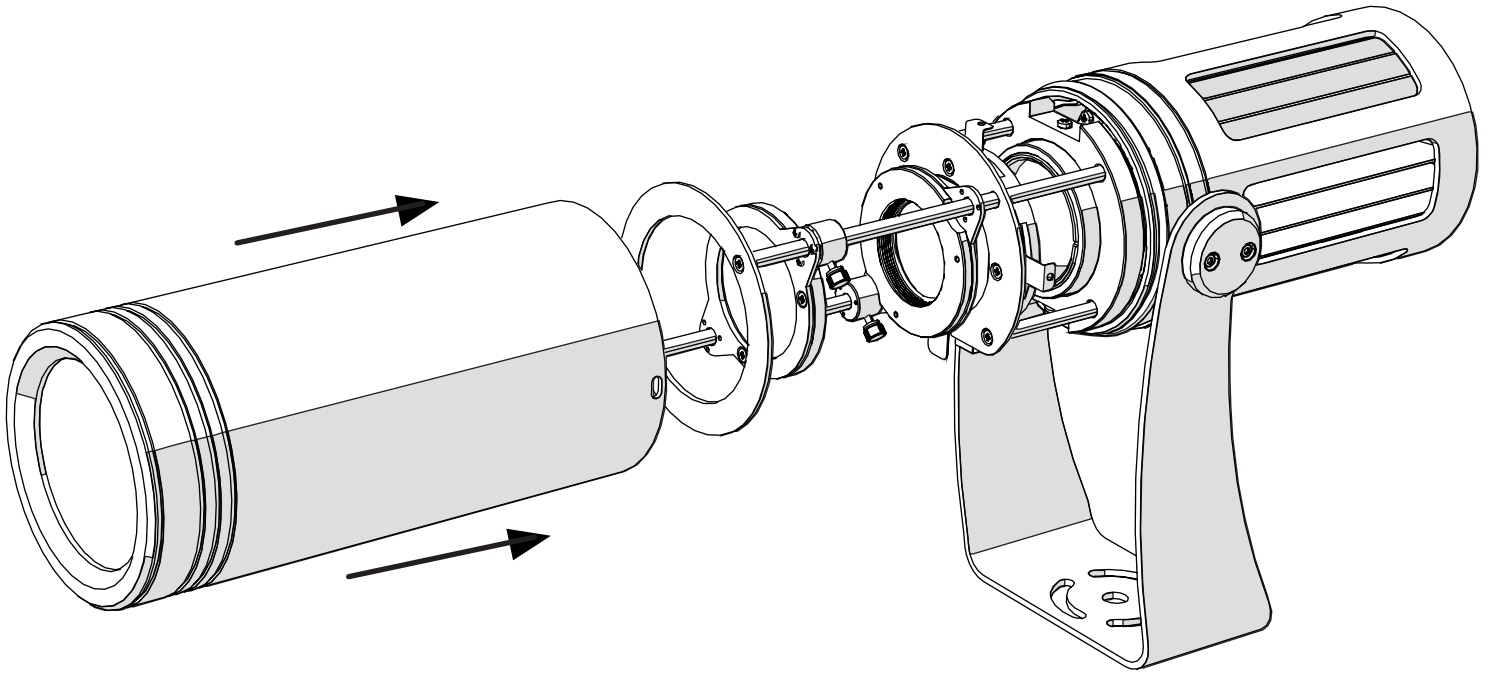
5. Powering up

5.1 Operating voltage and frequency

The unit may operates at voltages ranges from 85 to 264 VaC at a frequency of 47 or 63 Hz. It is not needed to effect any setup procedures: **LEDko EXT M** will automatically adjust its operation to suit any frequency or voltage within this range.

5.2 Connection to mains power

Mains cable characteristics

The mains cable provided is thermally resistant, complying to the most recent International standards.

Note: in case of cable replacement, similar cable with comparable thermal resistant qualities must be used exclusively (cable 3 X 1,5 ø external 10 mm, rated 300/500V, tested to 2 KV, operating temperature -40°C + 180°C, Coemar cod. CV5311).

Connection to mains power

LEDko EXT M is equipped with one power connectors.

The max absorption of **LEDko EXT M** is reported in the following table:

- 230 VaC 0.28 A constant during normal exercise.
- 115 VaC 0.56 A constant during normal exercise.
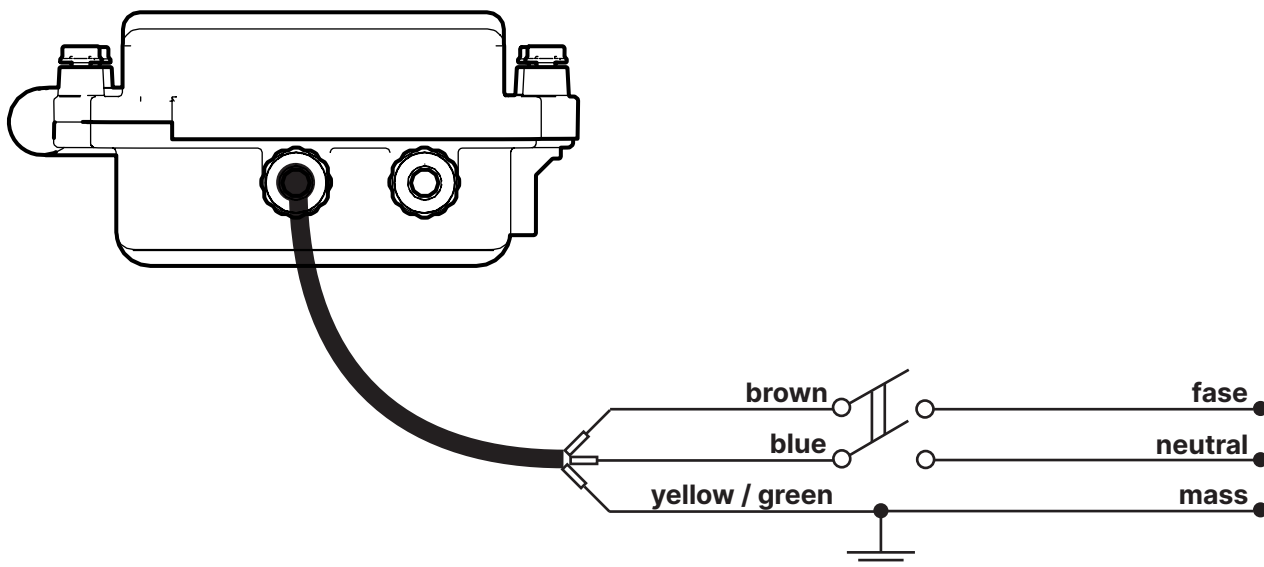
brown — fase
blue — neutral
yellow / green — mass

Warning!!
- The use of a thermal/magnetic circuit breaker is recommended. Strict adherence to regulatory norms is strongly recommended.
- **LEDko EXT M** should not be powered through a dimmer as this may damage the internal switching power supply.
- Prior to connecting the device to mains power, ensure that the mains characteristics are within the recommended range for the use of **LEDko EXT M**.
- All cabling and connections should be carried out by a suitably qualified personnel.

5.3 How to connect the Power Junction Connectors
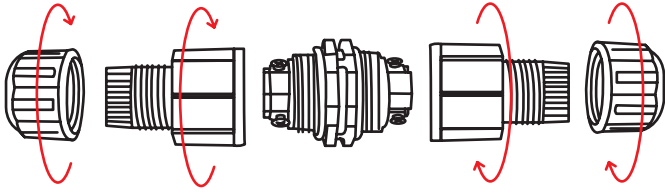
1. Unscrew the left cable gland and right cable gland.
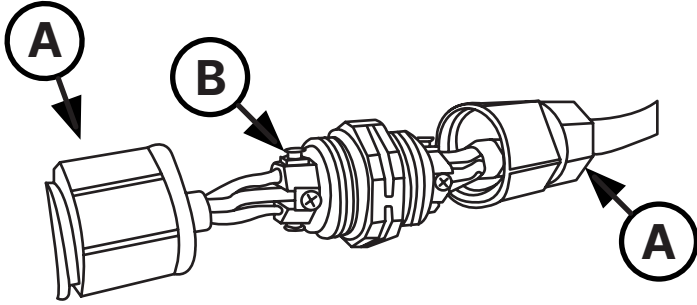
2. Insert the electric cables through the cable glands "**A**", tighten the wires inside the Pins "**B**" by screwdriver.

N.B. In order to make the product work properly it is important to connect the cables following the diagram below:

Brass color Pin > Blue (neutral)

Argent color Pin > Yellow/green (mass)

Black color Pin > Brown (fase)

3. Screw the both cable gland tightly (tighten is very important for waterproof).

Warning!!

The use of a thermal/magnetic circuit breaker is recommended. Strict adherence to regulatory norms is strongly recommended.

LEDko EXT M should not be powered through a dimmer as this may damage the internal switching power supply.

Prior to connecting the device to mains power, ensure that the mains characteristics are within the recommended range for the use of **LEDko EXT M.**

All cabling and connections should be carried out by a suitably qualified personnel.

6. Control signal connections (DMX version)

6.1 Control signal connection by IP67 Junction Connectors

Important! Protect all connections and all breaks in cable jackets from moisture or water.

The moisture or the water can cause corrosion in unprotected cable connections. They can also be along the inside of cables at breaks or cuts in the cable jacket (for example at connection points) and into fixtures because of the vacuum effect of temperature fluctuations inside fixtures. To protect connections and fixtures from moisture or water, use the Junction connectors that are protected to IP67 or higher.

To connect them follow the instruction below:
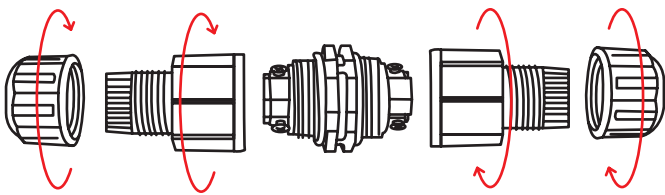
1. Unscrew the left cable gland and right cable gland.
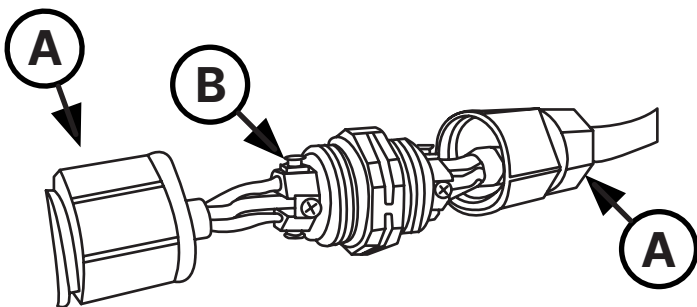
2. Insert the electric cables through the cable glands "**A**", tighten the wires inside the Pins "**B**" by screwdriver.

N.B. In order to make the product work properly it is important to connect the cables following the diagram below:

Pin 1 > Ground Wire

Pin 2 > Black Wire (negative)

Pin 3 > White Wire (positive)
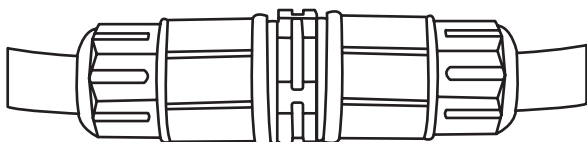
3. Screw the both cable gland tightly (tighten is very important for waterproof).

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4. To connect two or more products in series, follow the diagram below.

DMX junction connector

In

Out
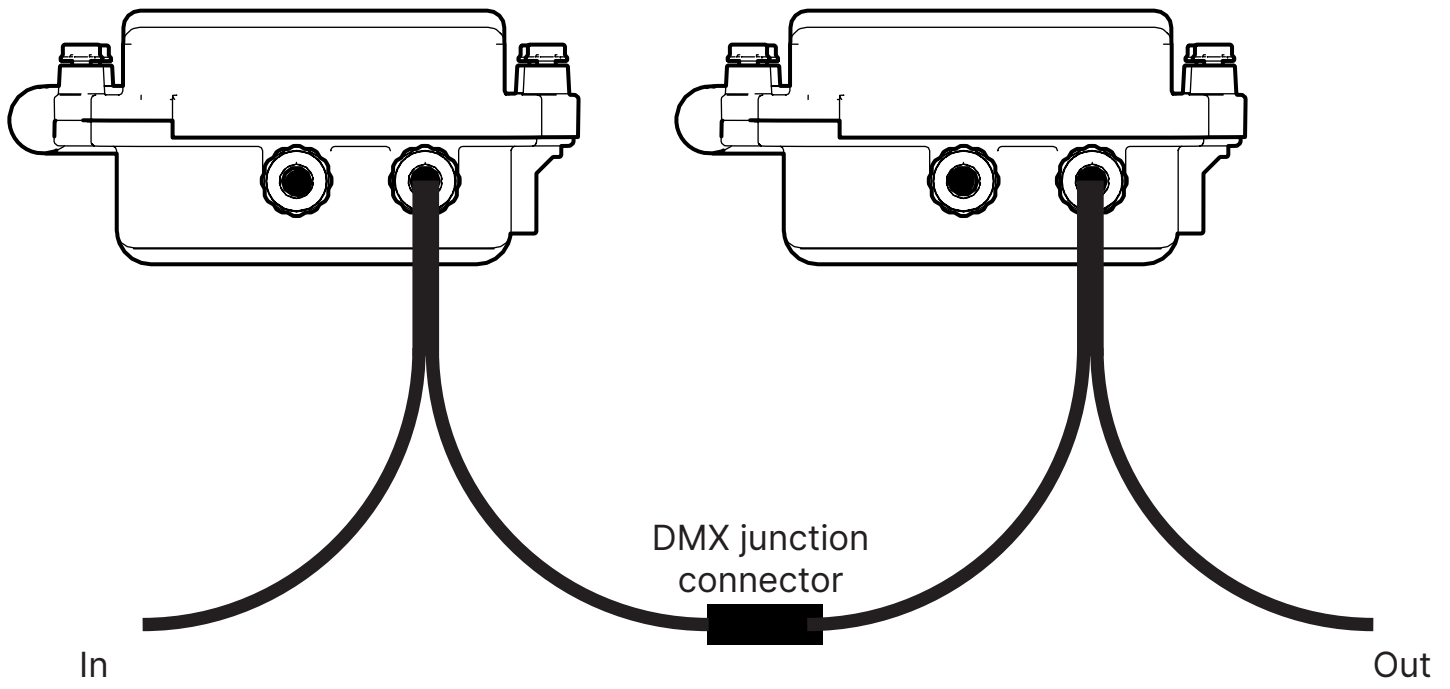
Note: Once the connection of the line is completed use the DMX end of line closure cap (RME34/G), indispensable for the last projector of the line.
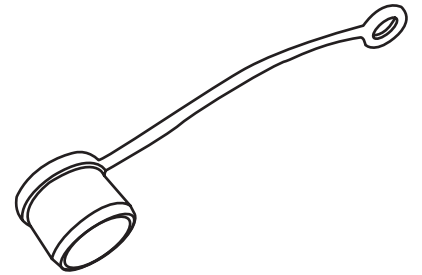
7. Turning the projector on

After having followed the preceding steps described, proceed with the power supply and turn on the projector connecting it to the mains power.

8. Setup via RDM (DMX version)

8.1 Quick guide to menu

The **LEDko EXT M** required RDM (Remote Device Management) to set up fixtures. Using an RDM compliant DMX controller, you can communicate with all the fixtures on a data link without needing to connect to each fixture individually. RDM lets you set the DMX addresses of all the fixtures on the link, carry out fixture configuration and retrieve fixture data including details of any error that has been logged. If two or more identical fixtures are set up with the same DMX address and in the same DMX mode, they will receive the same instructions and behave identically. Setting up identical fixtures with the same address is a good tool for troubleshooting unexpected behavior and an easy way to achieve synchronized action. Setting DMX addresses via RDM involves running a scan to identify the fixtures that are present on the data link and then allocating addresses either automatically or manually.

To use RDM:

1. Obtain an RDM-compatible controller such as the RDM UPGRADE INTERFACE B

(cod. AC10011A001) application running on a Windows PC.

2. Use a USB cable to connect the PC to a USB/DMX interface box

3. Connect the interface box to the data link.

4. Power the fixture on and carry out an RDM discovery / scan in your RDM-compatible controller.

5. You can then configure or retrieve data from the fixtures on the data link.

8.2 RDM Chart

PARAMETER	DESCRIPTION
DMX ADDRESS	Set DMX Address: (1-512)
CURVE	Set Dimming Curve: Linear, Logarithmic, Exponential, Halogen, Standard
FREQUENCY	Set Pwm Frequency: 600Hz-1500Hz-2000Hz-5000Hz-20.000Hz
LOCK PIN	Set Lock Pin
LOCK STATE	Set Screen Lock
FACTORY DEFAULT	Factory Reset
PERSONALITY	Set Personality: 5/1 Ch (Fixed White version) 5/2/1/Sunrise/Raw (VariWhite version)
SENSOR	Visualize Sensor
LED HOURS	Visualize Led Life Hours
DEVICE HOURS	Visualize Device Life Hours

8.3 RDM Error Chart

ERROR	DESCRIPTION	SOLUTION
MEMORY	Memory Reading Error	Perform A "Factory Reset"
HW MEMORY	Memory Hardware Error	Contact Coemar
DMX ADDR	DMX Addressing Error	The Personality Dimension Exceeds 512 Channels
NTC ERROR	Temperature Sensor Disconnected	Check Wiring NTC Led
SHORT NTC	Short-Circuited Temperature Sensor	Check Wiring NTC Led
OVER TEMP	Electronic Board Overtemperature	Ambient temperature too high, place the projector in an environment with temperature below 40°C

9. DMX chart Fixed White Version

9.1 DMX modes

DMX channels ↓	5 channels	1 channels
1	Master Dimmer	Master Dimmer
2	Spare Channel	
3	Dimmer Fine	
4	Strobe	
5	Special Function	

9.2 DMX Chart 5 and 1 channels

channel 5	channel 1	function	type of control	effect	decimal		percentage	
1	1	**master dimmer**	proportional	adjust luminous output intensity from 0 to 100%	0 - 255		0% - 100%	
2	-	**spare channel**	step	no effect	0 - 255		0% - 100%	
3	-	**dimmer fine**	proportional	fine dimmer control 16 bit	0 - 255		0% - 100%	
4	-	**strobe**	step	no effect	0 - 9		0% - 4%	
			proportional	variable speed strobing effect, from slow to fast	10 - 57		4% - 22%	
			step	stop strobe	58 - 59		23% - 23%	
			proportional	sequenced pulse effect, slow closing, fast opening (variable speed pulsing, from slow to fast)	60 - 108		24% - 42%	
			step	stop strobe	109 - 110		43% - 43%	
			proportional	sequenced pulse effect, fast closing, slow opening (variable speed pulsing, from slow to fast)	111 - 159		44% - 62%	
			step	stop strobe	160 - 161		63% - 63%	
			proportional	random strobe effect with variable speed from slow to fast	162 - 207		64% - 81%	
			step	stop strobe	208 - 209		82% - 82%	
			proportional	random strobe effect with variable speed from slow to fast	210 - 255		82% - 100%	
5	-	**special functions**	step	park	0 - 9		0% - 4%	
				600 Hz	10 - 22		4% - 9%	
				no effect	23 - 199		9% - 78%	
				LED control frequency tuning 1.500 Hz	200 - 205		78% - 80%	
				LED control frequency tuning 2.000 Hz	206 - 211		81% - 83%	
				LED control frequency tuning 5.000 Hz	212 - 217		83% - 85%	
				no effect	218 - 240		85% 94%	
				LED control frequency tuning 20.000 Hz	241 - 255		95% - 100%	

10. DMX chart VariWhite Version

10.1 DMX modes

DMX channels ↓	5 channels	2 channels	1 channel	Sunrise mode	Raw mode
1	Master Dimmer	Master Dimmer	Master Dimmer	Master Dimmer	Warm White Led
2	Dimmer Fine	White Tone		Dimmer Fine	Warm White Led Fine
3	White Tone			Proportional White Tone	Cold White Led
4	Strobe Effect			Step White Tone	Cold White Led Fine
5	Special Function			Special Function	

10.2 DMX Chart 5 channels

channel	function	type of control	effect	decimal			percentage		
1	**master dimmer**	proportional	adjust luminous output intensity from 0 to 100%	0	-	255	0%	-	100%
2	**dimmer fine**	proportional	fine dimmer control 16 bit	0	-	255	0%	-	100%
3	**white tone**	step	2.800 K	0	-	10	0%	-	4%
		proportional	proportional value from 2.800 K to 3.200 K	11	-	33	4%	-	13%
		step	3.200 K	34	-	60	13%	-	24%
		proportional	proportional value from 3.200 K to 4.000 K	61	-	87	24%	-	34%
		step	4.000 K	88	-	114	35%	-	45%
		proportional	proportional value from 4.000 K to 5.000 K	115	-	141	45%	-	55%
		step	5.000 K	142	-	168	56%	-	66%
		proportional	proportional value from 5.000 K to 5.600 K	169	-	195	66%	-	76%
		step	5.600 K	196	-	222	77%	-	87%
		proportional	proportional value from 5.600 K to 6.000 K	223	-	238	87%	-	93%
		step	6.000 K	239	-	255	94%	-	100%
4	**strobe**	step	no effect	0	-	9	0%	-	4%
		proportional	variable speed strobing effect, from slow to fast	10	-	57	4%	-	22%
		step	stop strobe	58	-	59	23%	-	23%
		proportional	sequenced pulse effect, slow closing, fast opening (variable speed pulsing, from slow to fast)	60	-	108	24%	-	42%
		step	stop strobe	109	-	110	43%	-	43%
		proportional	sequenced pulse effect, fast closing, slow opening (variable speed pulsing, from slow to fast)	111	-	159	44%	-	62%
		step	stop strobe	160	-	161	63%	-	63%
		proportional	random strobe effect with variable speed from slow to fast	162	-	207	64%	-	81%
		step	stop strobe	208	-	209	82%	-	82%
		proportional	random strobe effect with variable speed from slow to fast	210	-	255	82%	-	100%
5	**special functions**	step	park	0	-	9	0%	-	4%
			600 Hz	10	-	22	4%	-	9%
			no effect	23	-	199	9%	-	78%
			LED control frequency tuning 1.500 Hz	200	-	205	78%	-	80%
			LED control frequency tuning 2.000 Hz	206	-	211	81%	-	83%
			LED control frequency tuning 5.000 Hz	212	-	217	83%	-	85%
			no effect	218	-	240	85%		94%
			LED control frequency tuning 20.000 Hz	241	-	255	95%	-	100%

10.3 DMX Chart 2/1 channels

channel 2	channel 1	function	type of control	effect	decimal			percentage		
1	1	**master dimmer**	proportional	adjust luminous output intensity from 0 to 100%	0	-	255	0%	-	100%
2	-	**white tone**	proportional	proportional value from 2.800 K to 6.000 K	0	-	255	0%	-	100%

10.4 DMX Chart Sunrise mode

channel	function	type of control	effect	decimal			percentage		
1	master dimmer	proportional	adjust luminous output intensity from 0 to 100%	0	-	255	0%	-	100%
2	dimmer fine	proportional	fine dimmer control 16 bit	0	-	255	0%	-	100%
3	proportional cct	proportional	2.800 K	0	-	7	0%	-	3%
			proportional value from 2.800 K to 4000 K	8	-	86	3%	-	34%
			4.000 K	87			34%		
			proportional value from 4.000 to 5.000 K	88	-	152	35%	-	60%
			5.000 K	153			60%		
			proportional value from 5.000 to 5.600 K	154	-	192	60%	-	75%
			5.600 K	193			76%		
			proportional value from 5.600 K to 6.000 K	194	-	224	76%	-	88%
			6.000 K	225	-	255	88%	-	100%
4	step cct	step	no effect	0	-	9	0%	-	4%
			2.800 K	10	-	50	4%	-	20%
			3.200 K	51	-	91	20%	-	36%
			4.000 K	92	-	132	36%	-	52%
			5.000 K	133	-	173	52%	-	68%
			5.600 K	174	-	213	68%	-	84%
			6.000 K	214	-	255	84%	-	100%
5	special functions	step	park	0	-	9	0%	-	4%
			600 Hz	10	-	22	4%	-	9%
			no effect	23	-	199	9%	-	78%
			LED control frequency tuning 1.500 Hz	200	-	205	78%	-	80%
			LED control frequency tuning 2.000 Hz	206	-	211	81%	-	83%
			LED control frequency tuning 5.000 Hz	212	-	217	83%	-	85%
			no effect	218	-	240	85%		94%
			LED control frequency tuning 20.000 Hz	241	-	255	95%	-	100%
Note 1: If channels 3 and 4 are used simultaneously, channel 4 prevails.									

10.5 DMX Chart Raw mode

channel	function	type of control	effect	decimal			percentage		
1	warm white led	proportional	adjust luminous output intensity of warm white led from 0 to 100%	0	-	255	0%	-	100%
2	warm white led fine	proportional	warm white led fine control 16 bit	0	-	255	0%	-	100%
3	cold white led	proportional	adjust luminous output intensity of cold white led from 0 to 100%	0	-	255	0%	-	100%
4	cold white led fine	proportional	cold white led fine control 16 bit	0	-	255	0%	-	100%

11. Accessories and Spare parts

All the components of **LEDko EXT M** are available as spare parts from your **Coemar** dealer or Service. Accurate description of the fixture, model number and type will assist us in providing for your requirements in an efficient and effective manner.

12. Maintenance

12.1 Firmware update

The firmware of **LEDko EXT M** can be updates through the RDM protocol (ANSI E1.20). Contact Coemar assistance to receive the software and the device updater.

12.2 Periodic cleaning

!Regular cleaning is essential for fixture life and performance.

Buildup of dust and dirt degrades the fixture's light output and cooling ability.

!To clean the housing and front cover Isolate the fixture from AC power and allow the fixture to cool for 20 minutes.

!Before closing the cover after each cleaning, remember to heat the LEDs for at least 20 minutes, so as to eliminate all traces of humidity.

Lenses

Even a thin layer of dust can reduce the luminous output and alter the consistency of the beam. Regularly clean all filters and lenses using a soft cotton cloth, dampened with a special lens cleaning solution.

Cleaning of the unit

Use a soft brush or a common vacuum cleaner or a source of compressed air for removing dust. For the cleaning of the housing use a soft cloth and a non-aggressive cleaner, Lukewarm Water or Mild Soap.

FORBIDDEN: (Abrasive Cleaners, Highly Alkaline Cleaners, Aromatic Solvents, Halogenated Solvents, Brushes, Steel Wood).

Check that the internal fans (if provided in the product) and heat exchanger must be perfectly clean.

Don't use pressure washer or water jet, do not leave cleaners on plastic parts for a long period and do not apply cleaners in direct sunlight or at elevated temperatures.

13. F.A.Q. and answers

The following list shows common issues that may be simply solved. If issues persist, the unit must be repaired by a qualified personnel or just contact your **Coemar** service.

Question	Possible solution
LEDko EXT M does not emit light	**Projector not powered on:** • Make sure the power cable is plugged in or test the input voltage;

Help from Coemar Technical Services

If you are having difficulties and your problem is not addressed by this document, contact Coemar Technical Services directly at one of this email address:

info@coemar.com / service@coemar.com

Or call the number **+39 0376 1514412**

When calling for help, take these steps first:

• Prepare a detailed description of the problem

• Go near the equipment for troubleshooting

User notes

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	Information on disposal of the equipment
	The equipment at the end of its useful life must be disposed of at an appropriate recycling center for waste electrical and electronic equipment. The treatment and disposal of environmentally friendly, helps prevent potential negative environmental and health and promote the reuse and / or recycling of materials making up the equipment. Illegal disposal by the user includes the application of administrative sanctions provided by law.

CE

Coemar Lighting s.r.l.

Coemar reserves the right to change specifications without prior notice